Work in our laboratory has contributed extensively to the field of neuroendocrinology and currently have 3 main divisions:

- Reproduction: effects of gut peptides on the brain; role of kisspeptin and gonadotropin inhibitory hormone on reproductive function; vaccination in early life for life-long sterility.
- Metabolic neuroendocrinology: predisposition to obesity; relationship between stress and metabolic function.
- Heat stress: effects on body tissues, gut and brain function.

We utilise sheep models, which allow a range of studies not easily undertaken in small laboratory species. We have developed a number of novel neuroendocrine methodologies that allow analysis ranging from the whole animal down to the single cell and subcellular function. These techniques facilitate national and international collaborations, with grant funding from Australian and offshore sources. In addition, our laboratory undertakes a range of contract research projects.

Research Projects

Research in the Neuroendocrinology Lab currently focuses on the following areas:

1. Central regulation of reproduction by kisspeptin and gonadotropin inhibitory hormone
2. Estrogen signalling in neuroendocrine systems
3. Control of food intake and energy expenditure by leptin and novel regulatory factors
4. Optogenetic control of kisspeptin function
5. Neonatal sterility vaccination, using a novel approach
6. Heat stress in various genetic models

Selected significant publications: